Appendix B. Summary of Legislation, National Park Service Policy and Guidance Relevant to Development and Implementation of Natural Resources Monitoring in Park Units of the Northern Colorado Plateau Network.

PUBLIC LAWS	
National Park Service Organic Act (16 USC 1 et seq. [1988], Aug. 25, 1916)	The core of park service authority and the definitive statement of the purposes of parks, and of the National Park Service mission. The Act establishes the purpose of national parks: "…. to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."
General Authorities Act of 1970 (16 USC 1a-1—1a-8 [1988]), 84 Stat. 825, Pub. L. 91-383	The General Authorities Act amends the Organic Act to unite individual parks into the National Park System. The Act states that National Park System areas, "though distinct in character, are united through their inter-related purposes and resources into one national park system as cumulative expressions of a single national heritage; that individually and collectively, these areas derive increased national dignity and recognition of their superb environmental quality through their inclusion jointly with each other in one national park system preserved and managed for the benefit and inspiration of all the people of the United States…"
Redwood National Park Act (16 USC 79a-79q [1988]), 82 Stat. 931, Pub. L. 90-545	This Act includes both park-specific and systemwide provisions and reasserts systemwide protection standards for the National Park System. It qualifies the provision that park protection and management "shall not be exercised in derogation of the values and purposes for which these areas have been established," by adding "except as may have been or shall be directed and specifically provided for by Congress." Thus, specific provisions in a park's enabling legislation allow park managers to permit activities such as hunting and grazing.
National Environmental Policy Act of 1969 (NEPA) (42 USC 4321-4370)	NEPA encourages 'harmony between [humans] and their environment and promote efforts which will prevent or eliminate damage to the environment… and stimulate the health and welfare of [humanity]." The purposes of NEPA are accomplished by evaluating the effects of Federal actions. The results of these evaluations are presented to the public, Federal agencies, and public officials in document format, e.g. Environmental Assessments (EA) and Environmental Impact Statements (EIS) for consideration prior to taking official action or making official decisions.
Clean Water Act (33 USC 1251-1376)	The Clean Water Act, passed in 1972 as amendments to the Federal Water Pollution Control Act, and significantly amended in 1977 and 1987, was designed to restore and maintain the integrity of the nation's water. It furthers the objectives of restoring and maintaining the chemical, physical and biological integrity of the nation's waters and of eliminating the discharge of pollutants into navigable waters by 1985. Establishes effluent limitation for new and existing industrial discharge into U.S. waters. Authorizes states to substitute their own water quality management plans developed under S208 of the Act for Federal controls. Provides an enforcement procedure for water pollution abatement. Requires conformance to permit required under S404 for actions that may result in discharge of dredged or fill material into a tributary to, wetland, or associated water source for a navigable river.
Clean Air Act	To protect and enhance the nation's air quality to promote the public

(42 USC 7401-7671q, as amended in 1990)	health and welfare. The Act establishes specific programs that provide special protection for air resources and air quality related values associated with NPS units. The EPA is charged with implementation.
Endangered Species Act of 1973, as amended (ESA) (16 USC 1531-1544)	The purposes of the ESA include providing "a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved." According to the ESA "all Federal departments and agencies shall seek to conserve endangered species and threatened species" and "[e]ach Federal agency shall…insure that any action authorized, funded, or carried out by such agency…is not likely to jeopardize the continued existence of any endangered species or threatened species." The U.S. Fish and Wildlife Service (USFWS) (non-marine species) and the National Marine Fisheries Service (NMFS) (marine species, including anadromous fish and marine mammals) administer the ESA. The effects of any agency action that may affect endangered, threatened, or proposed species must be evaluated in consultation with either the USFWS or NMFS, as appropriate.
National Historic Preservation Act of 1966, as amended (NHPA) (16 USC 470 et seq.)	Congressional policy set forth in NHPA includes preserving "the historical and cultural foundations of the Nation" and preserving irreplaceable examples important to our national heritage to maintain "cultural, educational, aesthetic, inspirational, economic, and energy benefits." NHPA also established the National Register of Historic Places composed of "districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture." NHPA requires Federal agencies take into account the effects of their actions on properties eligible for or included in the National Register of Historic Places and to coordinate such actions with the State Historic Preservation Offices (SHPO).
Wilderness Act of 1964 (16 USC 1131 et seq.)	This Act established the National Wilderness Preservation System, provided direction for its management, for future inventory, and Congressional designation of additional wilderness areas.
Federal Advisory Committee Act (FACA)	Creates a formal process for Federal agencies to seek advice and assistance from citizens. Any council, panel, conference, task force or similar group used by Federal officials to obtain consensus advice or recommendations on issues or policies fall under the purview of FACA.
National Parks Omnibus Management Act, 1998 (P.L. 105-391)	Requires Secretary of Interior to continually improve NPS ability to provide state-of-the-art management, protection and interpretation of and research on NPS resources. Secretary shall assure the full and proper use scientific study results for park management decisions. In each case where an NPS action may cause a significant adverse effect on a park resource, the administrative record shall reflect the manner in which unit resource studies have been considered. The trend in NPS resource conditions shall be a significant factor in superintendent's annual performance evaluations.
NPS POLICIES AND GUIDANCE	
NPS Management Policies – 2001 (NPS Directives System)	This is the basic NPS servicewide policy document. It is the highest of three levels of guidance documents in the NPS Directives System. The Directives System is designed to provide NPS management and staff with clear and continuously updated information on NPS policy and required and/or recommended actions, as well as any other information that will help manage parks and programs effectively.
NPS Directors Orders	Second level of NPS Directives System. Directors Orders serve to clarify or supplement Management Policies to meet the needs of NPS managers.

	Relevant Directors Orders: DO-12 Environmental Impact Assessment DO-14 Resource Damage Assessment & Restoration DO-24 Museum Collections Management DO-41 Wilderness Preservation & Management DO-47 Sound Preservation & Noise Management DO-77 Natural Resource Protection
NPS Handbooks and Reference Manuals	The third tier in the NPS Directives System, these documents are issued by Associate Directors. These documents provide NPS field employees with a compilation of legal references, operating policies, standards, procedures, general information, recommendations and examples to assist them in carrying out Management Policies and Director's Orders. Level 3 documents may not impose new servicewide requirements, unless the Director has specifically authorized it. Relevant Handbooks and Reference Manuals: NPS-75 Natural Resources Inventory & Monitoring NPS-77 Natural Resources Management Guidelines NPS Guide to Federal Advisory Committee Act

Legal and Administrative Context for Monitoring Water Resources.

Layers of regulations and policies address the protection of water resources in our nation. In a park setting, the dual purposes of conserving natural resources while providing for visitor enjoyment requires a firm balancing act. That act is supported by Federal, state and local regulations and policies designed to ensure fishable, swimmable and potable waters. The following provides a general description of the Federal and state regulations and policies that influence the condition of park waters.

National Park Service – Guidance and Policy

Legislation and memoranda of agreements or understandings which influence the management of water resources include:
The National Park Service Organic Act (16 U.S.C. Sec. 1 et seq.) (1916**)** directs the Service to preserve park resources for future generations while allowing for public enjoyment. In 1916 Congress created the National Park Service to:

> "…to promote and regulate the use of the Federal areas known as national parks, monuments, and reservations... by such means and measures as to conform to the fundamental purpose of said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations."

The National Park Service Organic Act (16 U.S.C. Sec. 1a-1) (1970) recognized the growing diversity among the various park units. Congress passed legislation known as the Redwood Act declaring:

> "...that these areas, though distinct in character, are united through their inter-related purposes and resources into one national park system as cumulative expressions of a single national heritage; that, individually and collectively, these areas derive increased national dignity and recognition of their superb environmental national quality through their inclusion jointly with each other in one national park system preserved and managed for the benefit and inspiration of all the people of the United States..."

Federal Legislation and Executive Orders

The Federal Water Pollution Control Act (the Clean Water Act 33 U.S.C. 1251, et.seq.), passed in 1972, set goals for fishable and swimmable waters by 1983, and no further discharge of pollutants into the nation's waterways by 1985. To an extent, these goals have been attained via two main programs. A major grant program made funds available to construct municipal sewage treatment facilities. A second program limited amount of pollutants discharged. The National Pollutant Discharge Elimination System, a permit system for point-source dischargers, reflects the programs "effluent limitation" approach. The Environmental Protection Agency has set limits for pollutants released based on available technology and treatment cost for various industrial categories.

The Act also recognizes state primacy in managing and regulating the nation's water quality. The states implement water quality protection, as promulgated by the Act, through water quality standards. Standards are comprised of classifications which represent designated uses for prescribed stream segments. Identified standards include physical, chemical, and biological characteristics that, when applied to a segment, will ensure protection of designated uses on that segment.

One of three levels of protection is afforded any particular stream segment. As the absolute foundation, designated uses are protected. Degradation of water quality cannot extend beyond a level detrimental to the designated use or uses. A second tier of protection is afforded those segments where water quality exceeds that which is needed to support swimming and fishing. Only limited degradation can occur in these waters,

and only after an anti-degradation review that disallows substantial impacts to water quality. Social and economic aspects of the impacts are considered in evaluating the activity which may impact the stream segments. The last tier of protection calls for no degradation of the stream segment once it has been designated as such. These waters are referred to as High Quality - Category 1, Class 1, Unique, or Outstanding Natural Waters depending on the state.

The Clean Water Act with the 1987 amendments introduced new initiatives with emphasis on non-point source pollution control programs, toxics controls, and management of coastal and near-coastal waters. In addition, the Act, in Section 404, protects wetlands as these have been interpreted to be waters of the United States.

The Act induces parks to take part in triennial reviews, to continue monitoring programs, to analyze available data, and to interact with the states within which the parks reside. Under Section 303(d) of the Clean Water Act, each State must prepare a list of waters that are not meeting their water quality standards. The National Water Quality Inventory Report to Congress 305(b) is the primary vehicle for informing Congress and the public about general water quality conditions in the United States. This document characterizes our water quality, identifies widespread water quality problems of national significance, and describes various programs implemented to restore and protect our waters (U.S. Environmental Protection Agency 2004a). The lists of impaired waters contained in the 305(b) report are required to be submitted to EPA for review and approval every April of even years (U.S. Environmental Protection Agency 2004b). In cases where waters do not meet this goal, Section 303(d) requires states to develop Total Maximum Daily Loads, with oversight from the Environmental Protection Agency. A Total Maximum Daily Load allocates pollution control responsibilities among pollution sources in a watershed, and is the basis for taking the actions needed to restore a water body.

The Safe Drinking Water Act (40 CFR parts 141-144) (1974 and Amendments 1986) applies to developed public drinking water supplies. It sets minimum national standards and requires regular testing of drinking water for bacterial contamination, metals, volatile organics, and nitrates. At the bequest of the supplier, some testing can be waived. Individual park units as deemed by the Public Health Management Guideline (National Park Service 1993a) must assure "that water supply systems are properly operated and maintained..."

The parks test for total coliform and residual chlorine where applicable; these tests occur on a schedule developed and required by the state for systems serving the public. Bacteriological testing may occur bi-weekly. Unless exempted, potable waters require testing for metals, nutrients and organics.

The National Environmental Policy Act (42 USC 4371 et seq) requires that any major Federal action which may significantly affect the environment including the human environment be reviewed via the National Environmental Policy Act process. For example, major actions that correspond to the Endangered Fish Recovery Program of the Upper Colorado, remediation of abandoned mine sites or oil and gas sites, management of the floodplains where facilities or campsites are located, and discharge to wetlands may come under the auspices of the National Environmental Policy Act.

The Endangered Species Act (1973) requires that all entities using Federal funds must consult the Secretary of Interior on activities that potentially impact endangered flora and fauna (Section 6). It requires agencies to protect endangered and threatened species as well as designated critical habitats. At Arches and Canyonlands National Parks, few species associated with water or riparian areas are listed. Four endangered fish species which inhabit the Green and Colorado Rivers in Canyonlands fall under the auspices of the Endangered Species Act. The Colorado pikeminnow *(Ptychocheilus lucius)*, humpback chub *(Gila cypha)*, razorback sucker *(Xyrauchen texanus)*, and the bonytail chub *(Gila robusta)* are the species included in the Recovery Program for the Endangered Fishes of the Upper Colorado. The Green and Colorado Rivers as they flow through Canyonlands offer the last more or less natural riverine habitat for these fishes.

The Government and Performance Act of 1993 (Public Law 103-62) implies that parks have means of measuring or quantifying results of management activities. Regarding water quality, these indicators or threshold measures are intact in the form of water quality standards. More importantly the 303(d) listing of water segments signifies the inability to meet certain standards. Although it is the state's job to institute total maximum daily loads and ensure that the contaminant is reduced, it is the park's job to coordinate with the state and ensure that water quality standards can be met. The National Park Service is committed to a Servicewide strategic goal to significantly reduce the amount of water pollution in park waterbodies. Specifically, by September 30, 2005, 85% of park units will have unimpaired water quality. The National Park Service also is committed to preserving pristine water quality in parks where it now exists, including waters classified as Outstanding National Resource Waters or state-equivalent listed waters. The Natural Resource Challenge proposes $2.9 million annually to fund monitoring park water quality to track the attainment of the Service's long-term water quality strategic goal. Approximately 60% of the proposed funding is earmarked for monitoring impaired waters and approximately 40% is for pristine waters (National Park Service 2000).

Executive Orders Influencing Water Resources

Floodplain Management (E.O. 11988) [3CFR 121(Supp 177)] addresses protection and management of floodplains. The objective of this executive order is to "...avoid, to the extent possible long- and short-term adverse impacts associated with the occupancy and modifications of floodplains, and to avoid direct and indirect support of floodplain development whenever there is a practical alternative." In effect, this order directs the parks to avoid development in floodplains and to adhere to the Floodplain Management Guidelines (National Park Service 1993b).

The Protection of Wetlands Executive Order (E.O. 11990)[3CFR 121 (Supp 177)] directs Federal agencies to "...avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands whenever there is a practical alternative..." This order stipulates that the park avoid impacts to wetlands.

State Water Resources Legislation

The River Network (2004) provides a link to each state's actions regarding the Clean Water Act including listing of designated uses, anti-degradation policies and implementation of total maximum daily loads, and Tier III waters. An overview of each state links to state home pages. Much of the following information came from that webpage and the state links.

State of Utah

The Utah Department of Environmental Quality recognizes that the pollution of the waters of the state constitutes a menace to public health and welfare, creates public nuisances, and is harmful to wildlife, fish and aquatic life. Thus, the Division of Water Quality oversees the protection of the state's surface waters. These waters are protected for the following uses: 1) domestic purposes with prior treatment, 2) secondary contact such as wading and boating, 3) warm-water species of game fish and other warm-water aquatic life, and 4) agricultural uses. The anti-degradation policy relates to waters in Tier II that are neither use-protected nor high quality. Discharges to these waters are reviewed in light of degradation versus economic and social benefits. High quality waters, not referred to as Tier III waters, but instead High Quality Waters – Category 1 or Category 2 are most protected. However, a point discharge may be allowed in a Category 2 water if it does not degrade existing water quality. The waters of the North and East Forks of the Virgin River within Zion National Park are Category 2 waters. The State of Utah has no streamflow or biological criteria or guidance for water quality.

When exceedances of standards are identified for a particular stream reach, waterbody, or basin, it is included in the 303(d) list and in the 305(b) report. The 303(d) list includes the name of the impaired stream segment, the probable causes of non-support, or threatened, status and other pertinent data. The state 303(d) list notes that North Creek, which flows through Zion National Park, is impaired for agricultural use due to high total dissolved solids. Above Capitol Reef National Park, beginning in Bicknell to the Forest Service boundary, the Fremont River is impaired for Class 3A – cold water fishery for dissolved oxygen and total phosphorus. Further downstream, below Capitol Reef, the Fremont River is impaired for agricultural use with total dissolved solids in exceedance.

The Division of Water Resources provides comprehensive water planning, manages the state's water resource construction programs, and protects Utah's rights to interstate water. The Division of Water Resources also oversees ground water. Standards and classifications are applied to ground water sources such that operation of facilities which discharge to the ground water are regulated and permitted. Aquifers in the State of Utah are classified as well.

The Division of Water Rights administers the appropriation of water rights for beneficial use. Also, this division regulates activities affecting the bed or banks of streams through a permitting process.

State of Arizona

The Arizona Department of Environmental Quality is the state regulatory agency charged to protect human health and the environment by enforcing standards of quality for Arizona's air, land and water. The Department's Water Quality Division regulates drinking water and wastewater systems, monitors and assesses waters of the state, and provides hydrologic analysis to support hazardous site remediation. The state outlines ten designated uses ranging from domestic water source to fish consumption to aquatic and wildlife uses, to agricultural livestock watering. Arizona enforces anti-degradation policies for various waters, and has a Tier III category referred to as a Unique water.

The State of Arizona has no biological criteria for maintaining existing uses, but is working on a bio-assessment implementation guidance document.

The Aquifer Protection Permit program is a component of the Department of Environmental Quality's ground water protection efforts since it issues permits to prevent ground water contamination. Many communities in the State, including those surrounding Pipe Spring National Monument, depend on ground water as their principal source of drinking water. To protect such uses, comprehensive ground water management program in Arizona required that the department regulate discharges of pollutants that may adversely impact aquifers. The Aquifer Protection Program is responsible for issuing permits to regulate pollutants discharged by facilities including many new and existing mines, wastewater treatment plants, and industrial facilities.

The Arizona Department of Water Resources is the state agency that regulates ground water withdrawals and surface water supply. The ground water regulatory powers of department focus primarily on areas of the state that have been designated as Active Management Areas. These areas are located where competition for ground water is most intense, such as in larger cities and surrounding areas. Within each of the five management areas there exists a ground water rights system that limits ground water withdrawals, prohibits the development of new irrigated farmland, requires new subdivisions to have long-term dependable supplies, and requires measuring and reporting of ground water withdrawals.

State of Colorado

The Colorado Department of Public Health and Environment oversees the protection of the state's waters and is charged with conserving the state's waters and protecting, maintaining, and improving their quality for wildlife and aquatic life, for domestic, agricultural, industrial, recreational and other beneficial uses. The Water Quality Control Commission is responsible for developing specific state water quality policies. It adopts water quality classifications and standards for surface and ground waters, as well as various regulations aimed at achieving compliance with those classifications and standards. The Water Quality Division serves as staff to the commission and provides recommendations based on state waters assessments.

The state notes nine designated uses of water including 2 levels each for Aquatic Cold Water and Warm waters, domestic water supply, Recreation 1a, 1b, 2 and Agriculture. Their anti-degradation relates to those waters where existing water quality shall remain the same, and discharges to the waters will not cause impairment unless economic and social needs outweigh the benefits of maintaining the existing water quality. Colorado does not have a list of Tier III waters, but instead refers to them as Outstanding Waters. Curecanti National Monument is seeking such a designation for several tributaries to Blue Mesa Reservoir.

The State of Colorado has no streamflow or biological criteria or guidance with which to protect existing uses.

Within the Department of Natural Resources, the Division of Water Resources, headed by the State Engineer, ensures the competent water distribution, and administers water rights through appropriation doctrine. This division also permits ground water wells, provides water supply statistics, and surface flow data. The Colorado Water Conservation Board ensures the development, protection, and management of Colorado's waters. It is the only entity that can hold an instream water right.

State of Wyoming

The State of Wyoming offers the Water and Wastewater Program and the Watershed Planning Program within their Department of Environmental Quality, Division of Water Quality, to protect its waters. The Watershed Planning Program develops water quality standards, non-point source planning, water quality assessments, 401 certifications and wetland protection, total maximum daily load coordination and data quality and assurance. The state recognizes designated uses such as agriculture, fisheries, industry, drinking water, recreation, scenic value, aquatic life other than fish, wildlife, and fish consumption. Wyoming adopted similar language to the that of the Federal regulations (40 CFR Part 131.12) regarding anti-degradation. Their Tier III waters are referred to as Class 1 waters, and include those waters found within National Parks such as Teton and Yellowstone.

No streamflow criterion has been developed to ensure existing uses. Numeric standards are enforced at all times except during periods of below low flow. During such times, the department may, in consultation with the Wyoming Game and Fish Department and the affected discharger, require the permittees to institute operational modifications to ensure protection of aquatic life. Wyoming has adopted a narrative biological criterion which states that Class 1, 2, or 3 waters must be free of substances which will adversely alter the structure and function of aquatic communities.

The Ground Water Division, through the State Engineer, oversees the well head protection program, mapping and data acquisition. More importantly this division oversees the review of permit applications to put the state's water to beneficial use such as diversions and storage. The state reviews both surface and ground water applications. The Wyoming Water Development Commission is the only entity that can hold an instream flow right.

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